



BOROUGH OF MARGATE.

ANNUAL REPORT

OF THE

Medical Officer of Health

AND THE

Meteorological Report

For the Year.

1906.

Margate :

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186 & 188 HIGH STREET.

—
1907.

BOROUGH OF MARGATE.

ALDERMAN JOHN JAMES HERMITAGE, J.P., MAYOR.

Sanitary and Sewerage Committee :

COUNCILLOR EVANS, CHAIRMAN.

ALDERMAN CARTER.

„ HUGHES.

COUNCILLOR AMOS.

„ COLEMAN.

„ SMITH.

„ WHITE.

Medical Officer of Health :

BERTRAM THORNTON.

Sanitary Inspector :

EDWARD ELLIOT.

Town Clerk:

EDWARD BROOKE.

*SUMMARY OF STATISTICS
AND INFORMATION RELATING TO THE
BOROUGH OF MARGATE.*

Area of Borough.

1875 Acres (including 386 Acres of Foreshore).

Geological Formation. Subsoil, Chalk.

Population.

Census of March, 1901—23,118.

Estimated to middle of 1906—26,207.

Estimated maximum population during season—100,000.

Rainfall.

During 1906—20·4 inches.—Number of days on which
rain fell—166

Average for last 10 years—20·2 inches.

Water Supply.

Constant service from the chalk from the district of Wingham,
14 miles from Margate.

Sewage Disposal.

By water carriage, outfall into the deep sea two miles east
of Margate Jetty.

Number of Inhabited Houses. (1906) 4,500.

Assessable Value. £191,260.

Ratable Value. £176,072.

Rates. Borough and District, 5/1. Poor Rate, 1/9.

Birth Rate. 16·0 per 1000.

Death Rate (Corrected). 12·2 per 1000.

If deaths of Visitors are excluded the rate is 10·9 per 1000.



*To His Worship the Mayor, Aldermen and Councillors
of the Borough of Margate.*

GENTLEMEN,

I have the honour to submit to you my Third Annual Report. The Health of the Borough has again been good, and many matters of importance have been under the consideration of the Sanitary Committee; of these, the question of a more efficient method of Refuse Destruction, the Disposal of the excess of Seaweed, and the Paving of certain Yards and Back-ways are perhaps the most important. As this Report is prepared for the information of the Local Government Board and other Authorities, much of it has to be repeated each year. I also venture to hope that some parts of it may have special interest for the members of the public.

I am, Gentlemen,

Your obedient servant,

BERTRAM THORNTON,

Medical Officer of Health.

March, 1907.

PART I.

General Information on the Sanitary Features of the Borough.

Physical Characteristics. The Borough of Margate extends over an area of 1,922 acres, which includes 386 acres of foreshore. The Town follows the coast-line, which faces the North and North-West. Situated at the N.E. corner of Kent, it is exposed to sea breezes from all quarters except the West. The subsoil is chalk, and the Town is divided by a valley running East and West. Owing to this valley and the general undulations of the ground levels, the town is exceptionally favoured as regards surface drainage; it is a notable fact that even after the heaviest rainfall the streets become dry in a very short period of time. The amount of vegetation in the town and neighbourhood is very limited. The streets, except in the lower and older parts of the town, are well laid out, and there are numerous large open spaces; the sea breezes are thus able to circulate freely in all parts of the town. To the above factors may be attributed the noted dryness of the climate of Margate. It is not improbable that the large area of foreshore (386 acres), with its sand and seaweed-covered rocks, may also materially add to the salubrity of the air when the wind sets in from the sea.

House Property. The House Property in Margate is, on the whole, of good construction, a large proportion of the houses in all parts of the Borough being used as lodging houses in the summer months. Rents of all classes of houses are comparatively high, and this fact, combined with the rating which roughly amounts to one third of the rental, makes it difficult for the working classes to secure small cottages at a rent which will enable them to live without the tendency to

overcrowd by letting apartments in the summer. There is one Common Lodging House which has a capacity of 12 beds. There are a few congested courts in the neighbourhood of King Street, and in the Upper High Street, that are not desirable habitations from a health point of view; further reference to these properties will be found on page 32.

Water Supply. The new supply of water from Wingham, which was opened in August, 1903, has been much appreciated. The old supply from local sources had become so impregnated with salt (as much as 170 grains to the gallon) that it was a subject of universal complaint with visitors. The new source is situated in the district of Wingham, 14 miles from Margate, and the water is obtained from the chalk. The catchment area extends over about 15 miles of open country, and was specially selected by the Engineer, Mr. Albert Latham, on account of its freedom from any possible source of pollution, the site being approved by such eminent authorities as Mr. Charles Hawksley, C.E., Mr. Edward Eaton, C.E., and Mr. William Whitaker. The cost of this supply was £120,000, including the supply of several villages in the neighbourhood of the Works.

I am indebted to Mr. Barron, C.E., late Water Engineer to the Borough, for the following information:—The length of Mains laid in connection with this scheme was 51 miles. A Reservoir capable of holding 1,000,000 gallons has been erected at Flete, $2\frac{1}{2}$ miles from Margate, at a height of 177 feet above Ordnance Datum, from which the water is able to flow by gravitation to the highest points in the town. The original rest level of the water was about 34.00 above Ordnance Datum before pumping operations commenced. The total length of adit originally proposed and shown on the parliamentary plan was 9,300 feet, of which it has at present only been necessary to drive 3,650 feet; the supply obtained from this length of adit being found to be more than equal to any likely demand in the early future. The amount of water pumped from adits when driving was stopped was $2\frac{3}{4}$ million gallons per diem.

It is interesting to compare the following tables, which show the amount of water pumped, and the levels on certain days in the years 1904, 1905 and 1906—

Date. 1904.	Total Consumption in Gallons.	Level of Water in Well.		Daily fall recovered during night.
		Start. Above O.D.	Stop. Above O.D.	
January 1st ...	688,900	31.25	32.00	2.25
April 1st ...	801,020	31.50	33.00	1.50
July 1st ...	1,044,453	30.50	28.25	2.25
October 1st ...	909,205	27.75	26.00	1.75
*September 13th ...	1,387,870	27.25	23.00	4.25

* Greatest daily consumption for the year.

Mr. Stanley, Manager to the Waterworks Department, has kindly supplied the following figures :—

Date. 1905.	Total Consumption in Gallons.	Level of Water in Well.		Daily fall recovered during night.
		Start. Above O.D.	Stop. Above O.D.	
January 1st ..	781,959	27.50	23.50	4.0
April 1st ..	932,300	27.50	23.25	4.25
July 1st ..	1,050,100	26.50	22.75	3.75
October 1st ..	787,000	24.25	21.50	2.75
*August 14th ..	1,444,300	24.0	20.0	4.0

* Greatest daily consumption for the year.

Date. 1906.	Total Consumption in Gallons.	Level of Water in Well.		Daily fall, recovered during night.
		Start. Above O.D.	Stop. Above O.D.	
January 1st ...	898,800	26.9	23.3	3.6
April 1st ...	815,400	29.6	25.9	3.9
July 1st ...	1,251,600	26.6	22.0	4.0
October 1st ...	1,053,990	24.05	19.75	4.30
*September 3rd ...	1,455,680	22.25	18.0	4.25

* Greatest daily consumption for the year.

It might appear from the above, on comparing the figures for 1904 with those for 1905 and 1906, that there was a gradual lowering of the height of the water above O.D.; but as during the first week of January, 1906, the height was found to be 27.75, *i.e.*, three inches higher than in January, 1905, such a view would probably be incorrect. It seems to suggest rather that the general level of the springs has been reached. On January 1st, 1907, there were 470 houses and meter supplies in the outlying parishes, as against 276 in January, 1905, and 95 in 1904.

A Bacteriological Examination of the water taken from a tap in the Borough is made every month, with a view of getting prompt knowledge of any surface pollution. From the fact that the area from which the water is pumped at Wingham is open country, it is difficult to conceive the possibility of contamination, at the same time the pureness of the water supply is of such vital importance to a health resort, that no precaution should be neglected to ensure perfect safety. The Wingham supply has now been in use for three years and five months, and it is now possible to form some definite estimate of the permanent character of the water from a bacteriological point of view. Judging from the series of monthly analyses the water has established for itself a high reputation as a pure drinking water.

It may be useful to explain that all natural drinking waters contain micro-organisms, and that the quality of the water for domestic purposes is judged, partly from their number and mostly from their character, a very important factor being the bacteriological stability over considerable periods of time. "A water yielding a steady standard of bacterial content is a much more satisfactory water from every point of view, than one which is unstable, one month possessing 50 bacteria per C.C. and another month 5,000" (Newman's "Bacteriology and the Public Health"). In the same work the following table by Macé is given :—

BACTERIA PER C.C.				
Very pure water	...	...	0 to	50
Good water	...	...	50 „	500
Passable (mediocre) water			500 „	3,000
Bad water	...	...	3,000 „	10,000
Very bad water	...	...	10,000 „	100,000 and over.

The character of the micro-organisms present in the samples taken was reported to be satisfactory as regards the absence of rapidly liquefying organisms, and on no occasion were there present any bacteria resembling B. Coli. or other sewage organisms.

The following is the analysis and report on the sample taken in September, practically at the height of the season :—

Bacteriological Analysis of Water taken on September 13th, 1906.

PHYSICAL :—

Appearance in two-foot tube—

Colour	..	..	..	..	Nil
Suspended Matter	..	..	..	..	"
Deposit	..	..	..	..	"
Odour	..	..	..	..	"
Re-action	..	..	..	..	Neutral.
Temperature	..	..	..	..	12°C.

BACTERIOLOGICAL :—

I. Quantitative Exam. of Micro-Organisms.

20 Organisms per C.C. (average of three gelatine plates at 22°C. on fourth day).

10 Colonies on Agar Plates at 37°C.

II. Qualitative Exam. of Micro-Organisms.

(1) A few liquefying Bacteria at 22C. on gelatine.

(2) No growth on Digalski-Conradi plates, or in McConkeys Broth or in Parietti Broth.

(3) No co-agulation of Milk at 37°C.

(4) No gas production in gelatine shake cultures at 22°C.

(5) No sign of any Bacteria of pollution.

Remarks by George Newman, M.D. :—An excellent sample of water.

tember 18th, 1906.

Chemical Analysis of a Sample of Water taken on April 25th, 1906.

All numerical results expressed in grains per gallon.

Description of Sample	..	..	..	Public Supply.
Appearance	..	..	..	Clear.
Colour	..	..	..	Green Blue.
Smell	..	..	..	None.
Chlorine in Chlorides	..	..	..	1.54.
Phosphoric Acid in Phosphates	..	..	..	None.
Nitrogen in Nitrates	..	..	..	0.44.
Ammonia	..	..	..	None.
Albuminoid Ammonia	..	..	..	0.0006.
Oxygen absorbed in 15 minutes	..	..	..	Trace only.
.. .. 4 hours	..	..	..	0.008.
Hardness before boiling (total)	..	..	..	19.0.
.. after .. (permanent)	..	..	..	2.9.
Total solid matter	..	..	..	23.31.
Microscopical examination of deposit	..	..	..	Very slight, chalk and vegetable fibres.
Chlorine as Salt	..	..	..	2.54.

Remarks :—The above results are satisfactory throughout and indicate very pure water organically and free from sewage percolation.

The Microscopical examination calls for no adverse remarks.

SIDNEY HARVEY,

Public Analyst.

South Eastern Laboratory,

April 26th, 1906.

Borough of Margate.

**Milk
Supply.**

During the last two years since the supervision of the milk trade in Margate has been placed solely under the supervision of the Sanitary Department, there have been many improvements effected, and all the Dairies, Cowsheds, and Milk Shops have been regularly and carefully supervised. I am glad to be able to report a real improvement in the matter of cleanliness, though it is still difficult to get the men who milk the cows to keep the udders and teats of the cows clean, and to see that their own hands and overalls are clean too. I would again draw the attention of dairy proprietors to the decision in the Court of Appeal that a Dairy Company can be held liable for damages for selling infected milk, although such infection was latent and not discoverable by ordinary care and skill. Details of the number of Cowsheds, Milksellers, etc., will be found in the Sanitary Inspector's Report.

The shops in the town in which milk is sold I have in almost all instances found to be clean and the milk utensils well scoured, but there is a difficulty in getting the milk receptacles properly protected in summer time from dust and flies. Householders are also careless in this respect, and, as pointed out in the paragraph on Infantile Mortality, a large proportion of the children dying from Diarrhoea came to their deaths owing to the carelessness or ignorance of their parents.

Drainage.

The present drainage system was designed by Mr. Baldwin Latham, and carried out in 1889, at a cost of £80,000. The bulk of the sewage flows by gravitation, but a small proportion from the low lying districts is lifted by hydraulic pumps, and the whole of it is conveyed to a Penstock chamber at the edge of the cliff; from this it is carried in an outfall pipe 600 yards across the foreshore, and discharges into deep water at a point more than two miles to the east of the Jetty. The sea currents at this spot have such a direction, that whether the tide is ebbing or flowing, the sewage is carried away from the shore and disappears in the open sea. The dead end of the sewers are supplied with automatic flushing tanks. A large number of vent shafts have been erected, and every house is provided with an interceptor to cut it off from the main sewer.

Twice a year the whole of the main sewer from the High Street to the outfall is examined and swept out by the Borough workmen. Owing to the fact that the Margate Sewerage System has recently been extended to Westgate-on-Sea and Garlinge, and the steady increase in the growth of the Town, it has become necessary to contemplate the early enlargement of some of the main sewers. Mr. Baldwin Latham has been invited to advise the Council on this important matter, and it is to be hoped that he will shortly be in a position to recommend a scheme for carrying out this very essential work in an economical and efficient manner.

Refuse Disposal. House Refuse is collected daily over a large part of the Town in the early morning, in the remaining parts on alternate days. It is always a difficult matter for the Sanitary Authority to deal with refuse so as to get it away from the houses in the early hours of the morning, but on the whole Margate compares favourably with other Towns in this respect, considering the distribution of the houses, and the distance from the Dust Depôt. I am informed that as much as 51 tons have been collected and removed in one day during August.

It seems almost hopeless to induce householders to use proper galvanized iron receptacles, and above all things to keep them reasonably clean, by occasional scraping and scouring.

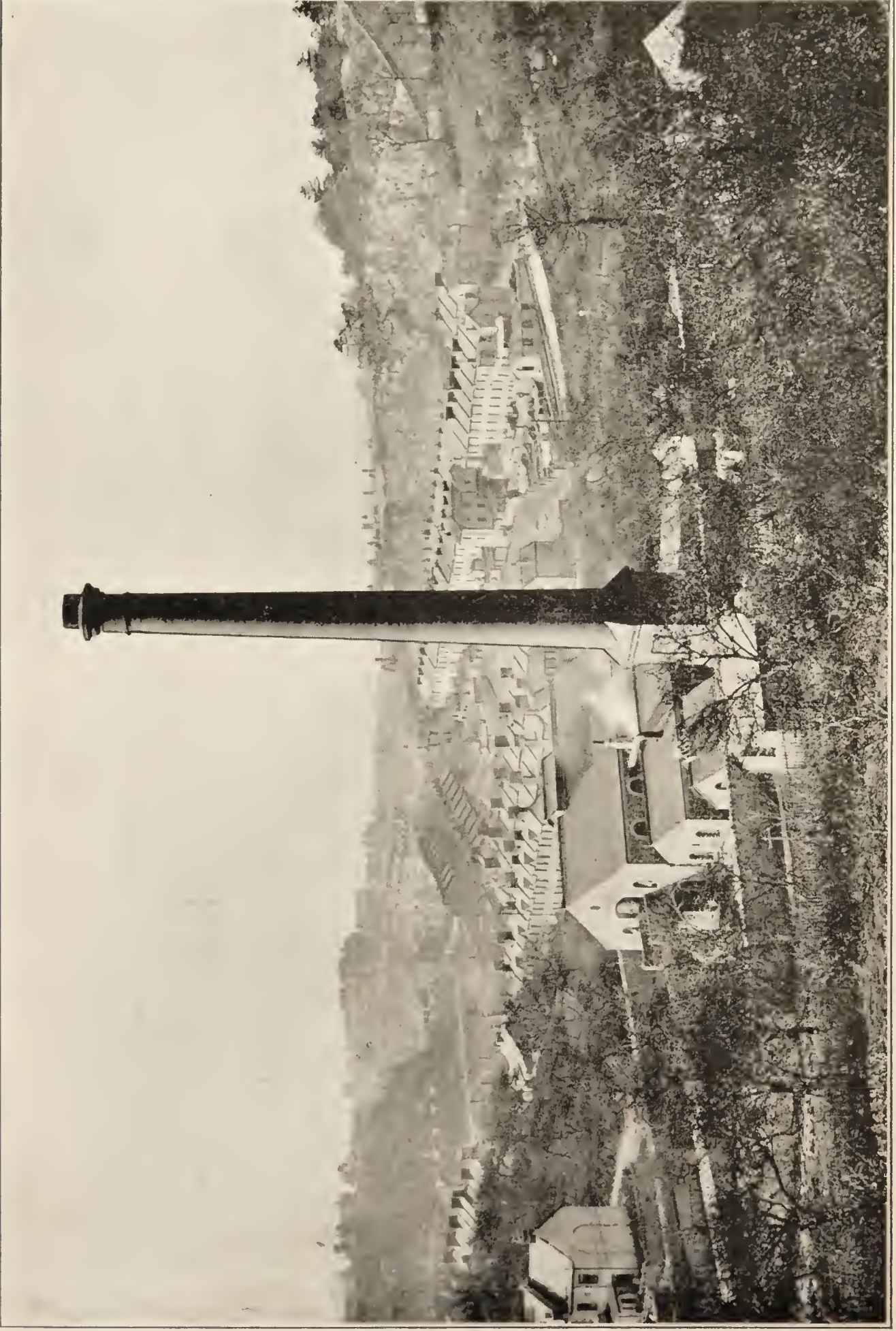
I am of opinion that no collection of old bones should be permitted in proximity to other buildings, as the stench from them in the summer time is extremely bad, and they attract swarms of flies.

Need of a Dust Destructor. The Town Refuse is conveyed in covered carts to the Refuse Depôt about a mile from the town, where it is burnt. In certain winds the offensive smoke from this refuse is blown over some parts of the town, and although it may not be actually harmful to health, it is undoubtedly a very serious nuisance to people who reside in the area over which the foul smelling smoke is blown. During the summer months when there is a gentle breeze from the dust heap towards the town, this faint sickly smell is particularly noticeable, even as far as Cliftonville, though many people may not suspect its

origin. In a health resort it is unwise to permit such a smell to exist, because it is liable to convey the impression to visitors and others that the drains are wrong or that there is some other sanitary defect. The refuse heap is also the home of swarms of rats, which may also at some time prove to be a nuisance, if not a source of danger from a health point of view. I cannot too strongly urge that a modern Refuse Destructor be provided as soon as it can be decided which is the most efficient and economical. Much misapprehension prevails as to these Destructors, owing to the fact that several of the earlier ones proved to be unduly expensive in erection and maintenance, but more particularly that they proved a nuisance to the locality by reason of the smoke and dust.

An elaborate report has been prepared by Mr. Borg, Borough Engineer, shewing details of Destructors in 41 towns; from this report I have extracted answers received by him from 15 towns of a more or less residential character, the remaining 26 towns being of a manufacturing type. The answers I have selected are those that bear on the question of nuisance to residents in the neighbourhood of the Destructor, they will enable those interested in the matter to judge for themselves as to the amount of inconvenience caused in these localities. I may add that as regards the other 26 towns complaints of nuisance were proportionately few, in all cases they appear to have been trivial, and due to dust which was easily remediable by erection of dust screens. It is unquestionably a fact that house refuse can be effectually destroyed without the emission of smoke, smell, or dust, and in this district it is probable that this could be done without any material increase of cost over the present unsatisfactory and insanitary system.

By the courtesy of Messrs. Goddard, Massey and Warner, of Nottingham, I am enabled to give a photograph of the Dust Destructor at Torquay; the photograph was taken when it was at work. It will be observed that there is no smoke issuing from the chimney shaft, and that the Destructor buildings are in close proximity to residential property.



Refuse Destructor, Torquay.

(The Photograph was taken while the Destructor was at work.)

TABLE GIVING REPORTS FROM 15 TOWNS AS TO NUISANCE
CAUSED BY DUST DESTRUCTORS.

Name of Town.	Date Destruc- tor Built.	Distance of Destructor from Centre of Town.	Whether Destructor is near to Residential Property, surrounded by buildings, or by an open space.	Complaints received about smell, or other real or supposed nuisance.
Aldershot	1900	1½ miles	Yes, near Property	None.
Ayr	1903-4	Practically in centre of town	Buildings on two sides and within 40 yards of dwelling houses	None as to smell, several as to dust from clinker, these removed by roofing yard.
Bath	1895	1 mile	Near residential property and close to Royal Victoria Park	Complaints have been received but no nuisance proved.
Chiswick	1905	1¼ mile	Residential Property within 80 yards, and adjoining Church	None whatever.
Croydon	1905	¾ mile	Between allotments and Gas Works	No.
Folkestone	1904	About 1 mile	Houses within 100 yards	None since shortly after completion.
Hereford	1897	1 mile	Within quarter-mile of one of the principal residential suburbs	No.
Heston and Isleworth..	1904-5	Situated approximately in centre of district..	Open space	No.
Ilkley	1905	About 1 mile	Immediately round is an open space, beyond that dwelling houses	No.
Lowestoft	1901	Fairly central	Surrounded by Residential Property which has chiefly been erected <i>since</i> Destructor was built	No.
Ramsgate	1900	About 1,300 yards	On open space . . . fairly populous neighbourhood	No complaint after first six months. Complaints received in summer when refuse is almost entirely vegetable or shell-fish.
Sheerness	1903	Directly in centre of town	Surrounded by houses	No.
Torquay	1898	½ mile	Since erection of Destructor, houses built right up to Destructor and all round it	Complaints received a few years ago from people living 800 yards distant, and one from lady living 1½ miles away. In every case Meteorological records proved wind blew in opposite direction during time of complaint. No complaints now.
Watford	1904	½ mile	Residential Properties closely adjacent	None whatever.
Worthing	1905	1¼ miles	Open space	No.

**Infectious
Diseases.**

The greater proportion of patients suffering from Infectious Diseases are sent to the Isle of Thanet Joint Isolation Hospital at Haine, two miles from Margate. This Hospital was open in 1902, and is designed on the most modern principles. It is capable of taking 82 patients, and is provided with single-bedded wards for private patients. A very desirable addition to this Hospital would be a convalescent ward for Scarlatina patients, such an addition would materially add to the accommodation of the Hospital, at a relatively small expense. In a convalescent ward patients would not be so liable to re-infection from more recent and virulent cases, consequently the period and cost of the detention would be curtailed, and the patients would leave the Hospital with much less chance of infecting others on their return home. The regular use of the quarantine wards would be equally desirable, so that doubtful cases could be kept under observation before they were admitted into the main building. There is also a special Hospital available for small pox on a separate site. Most of the important schools and institutions have provided their own sanatoria. The disinfection of infected houses, bedding, etc., of ratepayers is carried out at the public expense.



PART II.

Vital Statistics, Sanitary Work, Etc., in 1906.

Population.

The Population of Margate at the last census in 1901 was 23,118, the estimated population to the middle of 1906 was 26,207. The census is taken in March, and it is on that basis of the number of persons in the town at that period of the census year that it is necessary for the vitality statistics to be calculated. For a large proportion of the year, owing to the influx of invalids and visitors, the population is manifestly from 10 to 20 per cent. higher than is officially estimated, and for a few weeks during the season it is probable that the population would even exceed 100,000. Owing to the above considerations, and to the fact that another feature of our population is the exceptional number of children between the ages of 5 and 15 in the various schools (estimated as at least 2,500) and convalescent homes, and also the large proportion of unmarried women who are lodging-house keepers, or act as domestic servants and shop assistants, it is clear that our mortality statistics and birth-rate cannot be fairly compared with statistics of towns of a more evenly balanced population, and it speaks well for the health of the town that the figures come out as well as they do.

Birth Rate.

The total number of births registered in the Borough in 1906 is as follows:—Boys, 228; Girls, 192; Total, 420—of these 16 were illegitimate. The Birth-rate for the year being 16·0 per 1000. This rate is the same as last year, it is a very low Birth-rate as will be seen by the accompanying table, though it must be remembered, that as explained in the paragraph on Population,

it is not fairly comparable with other towns. I might add that in the year 1876, when England was in a very prosperous condition, the Birth rate of the whole country stood at the high figure of 36·3 per 1000.

Years.	Number of Births.	Margate Birth-rate per 1000 living.	England & Wales Birth-rate per 1000 living.
1896	425	20·4	29·6
1897	440	20·6	29·6
1898	517	23·7	29·3
1899	484	21·7	29·1
1900	483	21·3	28·7
1901	440	19·0	28·5
1902	540	22·9	28·5
1903	487	20·2	28·4
1904	463	19·0	27·9
1905	401	16·0	27·2
Average for 10 years	468	20·4	28·6
1906	420	16·0	27·0

Death Rate.

The total number of deaths registered from all causes within the Borough in 1906 was 313, which on the estimated population of 26,207 gives a Death-rate of 11·9 per 1000.

These deaths are made up as follows :—

Residents	...	...	...	...	213
Visitors	...	...	...	...	43
Residents in Public Institutions	...				16
Non-Residents in Public Institutions					41
					<hr/>
					313

The gross total as above corrected is as follows :—

- (1) By the subtraction of 41 non-residents brought into the district on account of sickness and infirmity, who died in Public Institutions in Margate.
- (2) By the addition of 49 deaths of Margate people who died outside the district, viz., 10 at the Haine Isolation Hospital, 9 in Chartham Asylum, and 30 in Minster Workhouse.

This gives a corrected total of 321 or a corrected Death-rate of 12·2 which is ·6 less than last year, the average Death-rate of the last ten years being 15·2

By excluding the visitors who die in the District (not in public institutions), the number of deaths is reduced to 278 or a further corrected Death-rate of 10·6. Although the majority of visitors who die in Margate are brought here as invalids, as their deaths do not occur in public institutions, the Local Government Board requires them to be ranked as residents for statistical purposes.

The following table shows that Margate compares favourably with other localities as regards its Death-rate.

ENGLAND AND WALES, 1906.

Annual Birth-rates and Death-rates from the Seven Chief Epidemic Diseases.

	Annual Rates per 1,000 Living.			Infant Mortality—Annual Death-rate of Infants under 1 Year per 1,000 Births.
	Births.	Deaths from all Causes.	Deaths from Seven Chief Epidemic Diseases.	
England and Wales ..	27·0	15·4	1·73	133
76 great towns	27·9	16·0	2·24	146
142 smaller towns	26·5	14·4	1·70	138
England and Wales less the 218 towns	26·3	15·0	1·18	115
Margate	16·0	12·2	1·6	109

Of this total of 321 deaths of Margate people, 104 had attained the age of 65 and upwards, and of these no less than 77 died of old age or such degenerative and senile diseases as Heart Disease, Bronchitis and Cancer.

The total number of deaths of children under one year was 46. As there were 420 births registered during the year, the infantile mortality is equivalent to 109 per 1000 births. On reference to the table below, it will be seen that the infantile mortality is lower than it has been during the last two years in spite of the increased population. It is also satisfactory to note that it is with one exception (108 in 1903), the lowest rate during the last ten years. The only figure which is specially notable is the mortality from Diarrhoea, 18 infants under one year died from a practically preventible disease. It cannot be too strongly urged that children should be breast-fed; it is a well-established fact that the mortality

from Diarrhoea among children fed entirely on the breast is much less than when they are fed on cows' milk or artificial food. Dr. George Newman, Medical Officer of Health for Finsbury, investigated 371 cases of fatal diarrhoea in children under one year during 1902 to 1905, and found that eighteen per cent. only of these deaths occurred among children fed entirely on the breast. It is probable that these children had the germs of Diarrhoea conveyed to their mouths by dirty hands, toys or comforters. The chief cause of summer Diarrhoea is carelessness in protecting milk and other food from contamination by dust and flies, the use of dirty bottles and food receptacles, the use of the abominable comforter, which falls about in the dust and is subsequently sucked clean by the infant, and by allowing children to crawl about in dirty homes and yards and conveying dirt from their hands into their mouths. The more educated classes are beginning to realise the importance of these points, and the desirability of feeding their children from the breast or other food adapted to their age. The dirty, careless type of mother who gathers the little knowledge of feeding and bringing up children from the old-fashioned ignorant monthly nurse, will not be likely to make any effort to take proper care of her unfortunate offspring till the law steps in and punishes her if she neglects to do so. It is interesting to learn from "Public Health" that "The Coroner for Merthyr has stated that it is his intention to hold an inquest upon every child who dies under twelve months old, if there is reason to suppose that its death can be attributed to improper feeding. The infantile mortality rate in Merthyr last year was 214 per 1000 births." If this excellent proposal were adopted in other localities it is extremely probable that there would be a prompt decrease in the mortality of young children. As I ventured to suggest in my last Report, it would be a desirable addition to our Sanitary Staff to appoint a tactful female Inspector specially experienced in the management of children, part of whose duties should be to call on mothers and offer to show them the many little points in the feeding and management of infants, about which so many young mothers are ignorant. This is done in many places, and is especially important in the case of poor women who are not attended in their confinements by doctors, but have to rely for their instruction in these matters on old-fashioned nurses and elderly relatives who are as a rule densely ignorant of the whole subject.

			1904.	1905.	1906.
Measles	...	...	5	0	0
Whooping Cough	...	...	2	2	2
Diphtheria	...	...	0	0	1
Diarrhoea	...	...	20	8	18
Enteritis	...	...	1	9	2
Other Septic Disease	...	...	0	1	0
Tuberculosis	...	...	2	0	2
Bronchitis	...	...	1	2	1
Pneumonia	...	...	0	1	1
Other disease of Respiratory Organs	..	..	1	0	0
Venereal Disease	...	...	2	1	0
Premature Birth	...	...	14	13	9
Accidents	...	...	3	1	0
All other causes	...	...	22	17	11
			73	55	47

Vaccination.

Mr. Jenner, the Vaccination Officer, has kindly provided me with the latest available statistics on primary Vaccination. It will be seen that Margate is not well protected in the event of an invasion of Small-pox. Fortunately this loathsome disease in England appears, as sometimes happens to other infectious diseases, to be passing through a quiescent period.

YEAR.		Total Births Registered.	Successfully Vaccinated.	Insusceptible of Vaccination.	Had Small-pox.	Number of Certificates from Conscientious Objectors.	Died Unvaccinated.	Postponed by Medical Certificate.	Removed to other Districts the Vaccination Officer of which has been apprised.	Removed—Address Unknown.	Percentage Successfully Vaccinated.	Excluding those who died Unvaccinated. Percentage.
1897	..	511	364	..	..	49	43	2	3	15	% 71	% 77
1898	..	603	346	4	..	105	85	3	7	21	57	66
1899	..	554	327	4	..	100	68	7	5	21	59	67
1900	..	563	376	1	..	101	68	3	3	10	66	76
1901	..	511	348	..	..	106	51	1	9	5	68	75
1902	..	630	435	5	..	88	76	18	8	8	69	78
1903	..	566	360	2	..	111	46	5	6	35	63	69
1904	..	544	373	1	..	84	59	6	4	22	68	77
1905	..	483	314	1	..	87	49	10	3	21	65	72

**Zymotic
Diseases.**

The number of cases notified under the Notification Act in 1906 was 143, this was twenty less than in 1905.

Scarlet Fever, 66.	Erysipelas, 9.
Diphtheria, 36.	Puerperal Fever, 1.
Enteric Fever, 31.	

In many instances it is quite impossible to ascertain the source of infection in the two first mentioned diseases, as it is often the case that children have such a light attack of the disease that their symptoms do not attract any attention, and they go to school or frequent public places and infect other children, who may unfortunately develop the disease in a much more severe form. Of the 66 cases of scarlet fever it was ascertained that 23 were due to importation, 19 to contact with other cases, 4 were found in the peeling stage, and about 20 no information could be obtained. As regards Diphtheria the information as to source of contagion is still less satisfactory, in nearly all the cases it is probable that patients contract it from others who carry the germs in their throats or noses, and it is extremely common for this to happen without any signs of illness or local symptoms. There was an exceptional number of cases of Enteric Fever this year, on this subject I have already made a special report to the Sanitary Committee and the Local Government Board. The group of cases that occurred during the late Autumn did not appear to be due to any common source of infection, in by far the larger proportion of them shell-fish appeared to be the only obvious direct or indirect source of infection. No less than eight cases occurred in a group of houses in King Street which I had previously reported to the Sanitary Committee as being in a very bad condition from a Sanitary point of view, some of them I had even condemned as unfit for habitation. It is satisfactory to see that the whole of this property has now been empty for some months, and it is to be hoped that it will be demolished. If these cottages had been in a better sanitary condition, instead of eight cases there would probably have been only two or three; it illustrates the difficulty of stamping out an illness like Enteric Fever when the houses are old, badly ventilated and sanitary arrangements are not up-to-date.

Zymotic Death-Rate.

The following 42 deaths occurred from the seven chief Zymotic diseases, the death-rate being 1·6 :—

Measles	...	3	Diphtheria	...	6
Scarlet Fever	...	1	Enteric Fever	...	6
Whooping Cough	6		Diarrhœa	..	20

The Zymotic death-rate necessarily varies considerably, it depends on many factors: last year there were only 17 deaths to 163 cases notified, this year, although there were only 143 cases notified, the number of cases that died was 42.

The following Table shows the Zymotic death-rate for the past 10 years.

YEAR.	1896	1897	1898	1899	1900	1901	1902	1903	1904	1905	Average of 10 Years.	1906
Zymotic Rate	0·7	0·9	1·1	1·4	1·5	0·7	1·8	0·5	1·7	0·6	1·0	1·6

There was rather more than the average amount of measles and whooping cough in 1906, and it will be seen that the mortality is higher. As these are not notifiable diseases, it is not possible to form any accurate estimate of the number of children affected. Both measles and whooping cough are dangerous diseases if not treated with care, and, as a rule, in most places the mortality from them is greater than from all the other infectious diseases put together. The difficulty of dealing with them from a public health point of view, is that they are both highly infectious before the characteristic symptoms attract the attention of the parents. In all cases it would be better for children suffering from these two diseases to be under medical care, and then they would be less likely to be allowed to go out of doors too soon and risk the complications of bronchitis or pneumonia.

The mortality from Diarrhœa was again high, 18 of the deaths occurring in children under 1 year of age, the other 2 were under 5 years. As pointed out in the paragraph on Infantile Mortality, many of these deaths could have been prevented by greater attention on the part of the parents in keeping their houses

clean, and milk and food protected from dust and flies. Doubtless the hot dry summer was an important factor in permitting the microbes which produce Diarrhoea to live and be blown about in the dust and so contaminate food and food utensils. From August 5th to September 12th rain only fell on three days. The total rainfall for July was 0·71 inch, for August 0·52 inch, and for September 1·87, inch and most of this towards the end of the month.

Tuberculosis. During the past year 22 Margate residents have died from this disease (10 less than last year), and 36 invalids who have been sent here on account of the world-wide reputation the Town has achieved as specially suited for the treatment of Tuberculosis, chiefly as it affects diseases of the bones, joints and glands. It is generally admitted that the strong winds which prevail at certain times of the year are not suited for Tuberculosis of the lungs, except in rare instances and when the disease is in its earliest stage. The climate has undoubtedly a marvellous effect, however, on many of the first mentioned conditions, especially if patients are sent here in the early stages and remain till they are thoroughly invigorated. The reason so many deaths occur among Visitors is, that they frequently delay coming to this bracing climate till it is too late to hope for a cure. The class of tuberculous patients who chiefly visit Margate for diseases of bones, joints and glands are probably quite incapable of being a danger to the rest of the community by infecting others, though of course this is not the case with patients suffering from Tuberculosis of the lungs unless very great precautions are adopted. Modern scientific investigations are gradually making it probable that infection is generally contracted from milk and other animal food, as well as from the inhalation of the dried sputum of consumptive persons. The view that it is an inherited disease is not correct, except in so far as an individual may inherit a special lack of power to resist the germ. When it is remembered that every year more than 50,000 persons die in England and Wales alone from Tuberculosis, it will be admitted that the attention of the public should be urgently directed to this eminently preventible disease, and that everyone should have the opportunity of knowing how to protect himself, by insisting on

procuring sound milk from clean dairies, by seeing that consumptive relatives take proper precautions to destroy their expectoration, by keeping as far as possible in good health, and last, but not least, by using their influence to induce local authorities to be active in dealing with insanitary overcrowded areas, and that they should insist on absolute cleanliness in the food and milk trades. In our own town the authorities are fully alive to these responsibilities. As will be seen in the Sanitary Inspector's report, considerably over 3,000 inspections have been made of various milkshops, dairies, stables, cowsheds, and other premises.

**Housing of the
Working Classes
Act, &c.**

During the past year much attention has been devoted to dilapidated properties, courts and alleys. The Sanitary Inspector and myself submitted a report on this subject to the Sanitary Committee, with a view to closing certain cottages, repairing others, and paving several back roadways, especially those which are much used as playgrounds for children. In old towns such as Margate there are necessarily a number of old ill-constructed houses and cottages, which in many instances are crowded together so as to hinder the proper circulation of air and access of sunlight. It is difficult to keep the yards and alleys adjacent to them regularly cleansed, all the more so as it often happens there is no efficient paving. This class of property is not uncommonly the home of numbers of children, who spend much of their time playing in these ill-ventilated, sunless and insanitary surroundings. There are not many areas of this sort in Margate, owing to the more careful supervision of late years, and landlords are generally ready to carry out reasonable repairs, and in most cases much can be done to make old-fashioned cottages conform to the modern requirements for light and air. Tenants are more easily able to keep their cottages clean if they have ample light, efficient sanitary arrangements and properly paved yards and approaches.

The Sanitary Committee have taken these important matters actively in hand, and it is to be hoped that during the year great improvements will be effected at a relatively small cost to the landlords and ratepayers.

The question of smell from decomposing seaweed and other sources has occupied the attention of the Sanitary Committee during the past year.

It may be an open question whether these evil odours are seriously detrimental to health, but they may at least be the means of lowering the vitality of people who are subjected to the nuisance, and at any rate they are undoubtedly a serious annoyance. Both visitors and residents are difficult to convince that the smells are not due to sewage or inefficient drainage.

During the summer months, with a stiff breeze and spring tide, enormous amounts of seaweed collect on the foreshore, especially in certain places under the cliffs, this seaweed decomposes in the hot sun, and if the wind sets in from the sea the smell is blown over the promenades and adjacent parts of the town. This nuisance has existed from time immemorial, and was just as bad before the town drainage was discharged into the deep sea at Foreness Point. It is easy to suggest that this seaweed should be removed, but during the summer months it is impossible to get farmers to convey it away in adequate quantities. Hitherto there have been no roads across the rocks to convey the seaweed out to sea with sufficient rapidity; one road has now been constructed, at a relatively small cost, across the rocks opposite the Fort. It may be possible for similar roads to be constructed across the rocks along the coastline facing the town. Another difficulty which may make it inconvenient for farmers to cart away seaweed, is the limited number of gaps in the cliffs, thus necessitating unduly long journeys from the farms to the foreshore, and involving extra work in drawing the carts over long stretches of soft sand.

It may perhaps give some idea of the difficulty of dealing with this matter when it is known that on some days of last year as many as 50 horses and carts and 70 or 80 men were employed in carting away the seaweed, and even that number was not sufficient. It is estimated that last year, which was an average year, about 5,000 loads were removed at a cost of £140 to the rates. On enquiry it has been found that other seaside towns are not troubled in this way to anything like the same extent. The question arises would it pay the Corporation to pay local farmers a small sum per load during the winter months to come and take the seaweed from the rocks; it is of course well known that seaweed is a valuable manure.

Another smell that has been brought to the notice of the Sanitary Committee and has occupied much of their attention especially during last summer, is the smell from the Gasworks which has been due partly to the dense volumes of smoke emitted every few hours from the Gas Works, as well as to the sulphurous fumes from other parts of the Works. It cannot be expected that gas manufacture can be carried on absolutely without smell, but during the summer at times the smell was a source of serious inconvenience and annoyance to those parts of the town within range of about half a mile of the Works. In this instance also the visitors in many cases supposed the sulphurous fumes to emanate from the drains. The Isle of Thanet Gas Company have, however, given courteous consideration to the Sanitary Committee's communications, and there has been an improvement during the last few months.

**Sea Water for
Watering the
the Roads.**

The subject of Watering the Roads with Sea Water has received special attention this year, and at the request of the Sanitary Committee I made the following Report :—

“I am strongly of opinion that the watering of the roads with sea water has been highly beneficial from a sanitary point of view, and it had been my intention to urge the extension of the mains to the parts of the Borough chiefly inhabited by the working classes.

Sea water renders the surface of the roads rather sticky, and consequently prevents the dust flying about; after many waterings there must be an appreciable amount of salt left behind after evaporation of the water, and this salt undoubtedly acts as a disinfectant.

It is well known that in hot weather dust is contaminated with various kinds of microbes, which, coming in contact with food causes it to go bad, and to be a common cause of diarrhoea, especially in young children. Anything, therefore, that lays the dust and disinfects it, must necessarily be an advantage from a health point of view.

The mortality statistics for August which have just reached me, show an exceptionally high mortality from Epidemic Diarrhoea among young children. I might add that a dry hot summer favours

Diarrhoea, and a showery summer minimises it by laying the dust. I do not wish to suggest that watering all the roads with salt water would altogether stop Infantile Diarrhoea, but it is at least significant that nine out of these ten children dying of Diarrhoea lived in roads which were not watered with sea water.

With reference to the suggestion that "in slight showers the surface water coming off the roads and going into the gullies would be more objectionable," I am of opinion that this would not be the case. If there were any odour from decomposition of the sea water, the roads themselves would smell, whereas in my experience they are singularly fresh smelling and sweet, owing no doubt to the large percentage of salt left after frequent waterings.

In hot summer weather the gullies and catchpits have always had a tendency to smell, and I have made enquiries which have elicited the fact that catchpits in districts where fresh water is used are at times as objectionable as in those streets where salt water is distributed.

In conclusion I would again express my opinion that this watering of the streets with sea water is a great boon from a health point of view, and I trust it may be possible to extend it especially in the districts inhabited by the working classes."

September 3rd, 1906.

The Midwives Act, 1902. This Act has been working satisfactorily in Margate during the past year, and it has certainly had the effect of stopping the worst and most ignorant class of so called midwife from attending poor women in their confinements. It could be wished that there were one or two more young and active midwives who had undergone special training in their profession; this, however, is perhaps a matter of funds. Most of the women who employ midwives are only able to pay very small fees. It may be, that when the public begin to appreciate the advantages of this Act, funds may be forthcoming to augment the fees for confinements in really deserving cases, and it may be possible to enlist the services of that most excellent and ancient Charity, "The Margate Lying-in Charity," which has already assisted nearly 15,000 poor women in their confinements.

Miss May's Report will be read with interest, and from it will be gathered the class of work that has been done during the past year.

"Since my last Report the number of Midwives practising in Margate has been reduced from eight to six—one having died and the other given up work. Out of these six, one has had no cases at all this year in the Borough, two have had a great deal of ill-health and have only done 12 cases between them, so that the work has been practically divided between the other three.

"During 1906, 106 cases have been attended by Registered Midwives, and the notes are, on the whole, very satisfactory, the work having been, as far as I am able to judge, carefully done, though it is hard to enforce the rule of ten days' attendance—necessary as it is—when such small fees are paid by the patients, and sometimes, indeed, not forthcoming at all. No serious illness of any kind has been reported among the mothers; four times a doctor has been summoned, twice when the infants died, and these are the only deaths. The kindness and prompt attention of the medical men have been much appreciated, and the arrangement by which the poorest mothers can have their skilled help at any time—and the Midwives have no excuse for not sending for them—according to the rules of the Act, is surely a great boon to the poor of Margate, and I only wish every other borough or district in the county had similar plans.

"There is no doubt Midwives have it in their power to do a great deal of good among the people—for instance, in inducing mothers to suckle their babies, or when this is impossible, *showing* them, if necessary, how to bring them up by hand. They can, of course, do just as much harm in advising wrong methods. (One tiny infant, a patient of one of the Midwives, who is very proud of it, weighs less than half the weight of a normal baby, but she tells me with great rejoicing—'he can take the breast, mind you, and I tell you he's going to live!')

"Three unqualified women have been reported as doing midwifery in the town—these have received letters of warning."

EDITH E. G. MAY, C.M.B.,
Inspector.

During the year I have visited the various **Factory and Workshop Acts.** slaughter-houses, dairies, cowsheds, milkshops, bakehouses, etc., and on the whole have found them in a healthy condition, and that they complied with the Public Health Acts and Local Bye-Laws. On the occasions on which I had reason to call attention to minor breaches of regulations my suggestions were readily carried out. The slaughter-houses receive weekly visits from the Sanitary Inspector or his Assistant, who also pay frequent visits to other premises requiring sanitary supervision. The Sanitary Department is always glad to receive notice of any Nuisance from either Residents or Visitors.





BOROUGH OF MARGATE.

Report

OF THE

SANITARY INSPECTOR

On Work carried out

During the Year ending December 31st, 1906.

*To the Chairman and Members of the Sanitary and Sewerage
Committee of the Borough of Margate.*

GENTLEMEN,

I beg to submit my twelfth Annual Report on the work carried out during the year ending December 31st, 1906.

During the year 3,196 inspections (and re-inspections where required) have been made to property situated in various parts of the Borough, notices being served where necessary, which has resulted in the following work being carried out :—

Twenty-six houses have been connected to the sewerage system of the district, abolishing 21 cesspools and four common privy pits. In addition, two dilapidated closets have been pulled down and cleared away, and the wooden floors of four closets removed and cement floors laid in their places.

Twenty-nine new closet pans have been fixed in the place of broken ones, eight foul and broken pan container closets with D traps underneath have been removed and pans of a wash-down pattern fixed in the place thereof.

Twenty-seven new flushing cisterns have been fixed, replacing broken ones, and 23 cisterns repaired. Three closets were found without any flushing apparatus, these have now been provided with a proper cistern and fall pipe and efficient water supply thereto.

The soil pipe from closets were found unventilated in five cases, and three of them have been removed from the inside of the house to the outside, and the whole have been provided with 4in. ventilating shafts in each case, above the junction of soil and closet.

Fifteen small 2in. ventilating shafts have been removed and 4in. ones fixed in the place thereof, and six broken ventilating shafts have been repaired, joints raked out and re-stopped.

Five broken sinks have been replaced with new ones, and nine large earthenware wastes have been removed and lead wastes fixed in their places; two large 6in. bell traps over which the wastes discharged have been replaced by proper glazed-ware traps.

Twelve defective water supplies have been remedied by putting in new house service pipes or repairing them where necessary.

Two-hundred-and-three common Nuisances, arising from stopped and overflowing drains and gullies, dirty closet pans, etc., have been dealt with and the nuisance abated, and 18 broken drains repaired.

Ten houses found in a dirty condition have been cleansed and whitewashed where necessary, and four cases of illegal occupation of premises have been dealt with; in three cases the occupiers ceased to occupy the premises, and in the fourth case the owner built a proper fire place, chimney flue, etc., to comply with the requirements for a dwelling house. Two cases of overcrowding were abated by the occupiers removing to other rooms.

Eight lots of animals found in a dirty condition were dealt with, the sheds being cleared up and limewashed, or the animals were removed.

Fifteen yards in a dirty condition with vegetable refuse, etc., have been cleared up.

Three hundred and seven nuisances arising from offensive accumulations, such as manure, house refuse, etc., have been removed, also five large accumulations or offensive fish trunks.

There are ten places used for Sale of Fried Fish; these have been kept under constant observation, and notice has been served in six cases to cleanse the apparatus used for frying.

There are eleven registered Slaughter Houses and six licensed ones within the Borough; these are visited weekly and other visits occasionally, and they have generally been found in a satisfactory condition, considering the nature of the business

carried on therein, only in one instance was it found necessary to serve a notice to lime-wash and cleanse the premises. There is also one license for a Knacker's Yard, this has always been found in a clear and clean condition, free from offal, etc.

Housing of the Working Classes Acts. Under the above Acts, twenty-two houses have been dealt with, twelve of which have been cleansed, whitewashed, repapered, doors, windows, floors, etc., repaired, and bare surfaces of yards tarred where required ; of the remaining ten houses, two blocks of five houses each, five are condemned as being unfit for human habitation, and the necessary steps are being taken to place the remaining five into an habitable condition. A report has also been made with a view to getting various courts and passages properly paved and drained with an impervious material.

Factory and Workshops Acts. Under these Acts it is compulsory to keep a register of every Factory, Workshop, Domestic Factory or Workshop within the district, and at the present time there are three hundred and ninety-nine places upon the register, consisting of the under-mentioned trades.

Factories where power is used			...	44.	
Builders	...	5	Mineral Waters	...	5
Brewers	...	1	Electro-plate Works		1
Cabinet Makers	...	2	Electric Light	...	1
Laundries	...	2	Corn Merchants	...	3
Printers	...	10	Gas Works	...	1
Wood Choppers	...	2	Laundries (private)		2
Motor Works	...	2	Private Works	...	7

The Workshops, etc., are places in which no mechanical power is used, and consist of the following occupations or trades (355):

Builders	...	33	Bakehouses	...	34
Bootmakers	...	42	Boatbuilder	...	1
Basket Makers	...	2	Beer-bottlers	...	4
Blacksmiths	...	8	Cabinet Makers	...	15
Cycle Works	...	8	Coach Works	...	8
Dressmakers	...	34	Milliners, etc.	...	33
Laundries	...	75	Plumbers, etc.	...	12
Picture Framers	...	6	Harness Makers	...	4
Tailors	...	26	Watchmakers	...	10
TOTAL		...	399.		

The number of inspections made to the above was 881, and notices were served and the necessary work carried out as follows :

20 Limewashings.	7 dirty closet pans cleansed.
1 Flushing Apparatus.	2 Urinals repaired.
1 new lavatory basin.	
TOTAL	31.

During the year we have removed to the Haine Ambulance and Isolation Hospital, 103 patients suffering from Disinfection. the various notifiable infectious diseases, and six to other houses in the Borough. This has involved the fumigation of 137 rooms, and the undermentioned articles have also been removed to the Disinfecting Station for disinfection by the Steam Disinfector :

16 Beds.	45 Mattresses.
12 Palliasses	72 Pillows.
25 Bolsters.	138 Blankets.
2 Coats.	4 Rugs.
6 Cushions.	11 Bundles of various articles.
TOTAL	331.

Four lots of bedding found deposited in various parts of the Borough have been carted away and burnt.

Dairies and Cow Sheds Orders.

There are 106 places on the register kept under these orders, 10 being Cow-keepers within the Borough, 85 who are Purveyors of Milk only, and 11 are Farmers who keep their cows outside the district, but retail their milk from carts within the Borough. Notices have been served to cleanse and lime-wash the cow sheds in five cases, and three cow sheds have been provided with more ventilation, by fixing " Louvre " ventilators on the ridge of the roofs and fresh air inlets at the plate level, and more light by fixing skylight sashes on the roof of each shed ; this has effected a great improvement.

The 281 stables have been kept under constant inspection, for accumulations of manure, etc.

Under the above Acts I have taken 102 samples of various articles of Food, and delivered the same, after complying with the requirements as to divisions, etc., to the Public Analyst at Canterbury. On March the 19th, six samples of Butter, five

samples of Margarine, and four samples of Lard were taken, the whole were certified to be the genuine articles asked for, the Margarine also being sold in conformity with the Margarine Act. On April the 18th, five samples of Coffee, five samples of Sugar, and five samples of Cheese were purchased ; three of the Coffees were certified to be genuine Coffee, one certified to contain forty-one per cent. of Chicory, and one to contain fifty-five per cent. of Chicory, but both samples being sold as a mixture of Chicory and Coffee, properly described as such on the labels, no action could be taken ; the Cheese was certified as being free from adulteration, and the Sugars genuine Sugar.

On July the 9th twelve samples of Milk were taken, eight of these were certified genuine Milk, but six of these contained Boracic Acid.

One contained fifteen per cent. added water,
 One contained thirteen per cent. added water,
 One contained twenty-four per cent. added water,
 One contained twenty-nine per cent. added water,

but as these samples were taken in an informal manner, no action could be taken against the sellers of the milk.

On July the 14th, in consequence of the scare respecting tinned foods, twelve samples, consisting of the following articles of food, were purchased for analysis by the Analyst :

Boiled Mutton.	Roast Beef.
Corned Beef.	Boiled Rabbit.
Ox Tongue.	Brawn.
Veal and Ham Paste.	Salmon.

These were subjected to a searching chemical and bacteriological examination, but nothing injurious was found in any of them, and were free from metallic impregnation in each case.

On August the 21st, twelve samples of Milk were taken at the Railway Station immediately on the arrival of the train with the milk ; eleven of these were certified to be genuine and free from preservatives ; the remaining sample was found deficient in fat or cream to the extent of four per cent., the vendor of this sample was written to and cautioned. Next morning ten samples of milk were taken from vendors of milk from their carts in the streets, more especially from those whose milk proved wrong among the samples

taken informally on July 19th, but only in one instance was the sample of milk proved wrong, viz., deficient in fat or cream to the extent of three per cent.; the remaining nine samples were certified to be genuine and free from preservatives.

On September the 19th, ten samples of Butter were purchased, six of these were certified to be genuine Butter, one to contain 1.11 per cent. of water in excess of the legal limit of sixteen per cent., two consisted entirely of margarine, and one to contain 45 per cent. of fat foreign to butter. These samples having been taken informally, no action was taken in the matter. On the same date five samples of Condensed Milk were purchased, these were certified to be free from any impurities, and the same were sold in conformity with the Food and Drugs Acts, viz., with the contents of tins described on the labels.

On November the 20th, five samples of Butter were again taken from those dealers whose samples proved wrong on September 19th, three of them were certified to be genuine Butter, one to contain fifty-three per cent. and upwards of fat foreign to butter, and one to consist entirely of Margarine. This sample also (exposing the fact of that article) being sold contrary to the Margarine Act, viz., selling Margarine without having the word Margarine printed in capital block letters on the wrapper in which the Margarine was sold. On the same date five samples of Whisky were purchased, the Analyst certifying all five samples to be above the legal limit of seventy-five per cent. of proof spirit allowed by the Food and Drugs Amendment Act.

Thirteen samples of Water have been taken and sent to London for bacteriological examination, and one to Canterbury for chemical examination.

I have also condemned and seen destroyed the under-mentioned articles of food, which were in my opinion unfit for human consumption :

Seven hundred herrings.

Six ducks.

A quantity of mixed fruit.

Sixty-six kippered herrings.

Seventeen pounds of marmalade.

Nine pounds of strawberry and apple jam.

Five pounds of apple and blackberry jam.

Three pounds of mixed fruit jam.

The Mortuary.

This has been kept in a clean condition, but the use of same was only required on three occasions during the year 1906, for the purpose of depositing bodies awaiting inquest.

Legal Proceedings.

On Wednesday, December the 19th, proceedings were taken before the Borough Magistrates against the vendor of a sample of butter (marked No. 4) for selling as butter an article of food which was not of the nature, etc., demanded, viz, butter adulterated to the extent of fifty-three per cent. and upwards of fat foreign to butter. A conviction was obtained, the defendant being fined £10 and 8/- costs.

At the same Court proceedings were also taken against the vendor of a sample (marked No. 5), for selling as butter (which consisted entirely of margarine) an article of food which was not of the nature, subject and quality demanded. A conviction was obtained, the defendant being fined £5 and costs. The same defendant was also proceeded against for an offence under the Margarine Act, for selling the margarine without placing the same in a proper wrapper. A conviction was obtained, the defendant being fined £1 and 6/- costs

The Town Clerk appeared on behalf of the Sanitary Committee in each case.

In conclusion, I beg to return my sincere thanks to the Chairman (D. T. Evans, Esq.) and each member of the Sanitary Committee for the assistance they have at all times given me in carrying out the many and various duties applicable to this office, and also take this opportunity of thanking the assistant Sanitary Inspector (Mr. J. M. Brown) for the ready assistance he has at all times given me, and beg to remain,

Yours obediently,

EDWD. ELLIOT, Assoc. Royal San. Inst.,

Chief Sanitary Inspector

Borough of Margate.

February 14th, 1907.

TABLE I.

VITAL STATISTICS OF MARGATE DISTRICT DURING 1906
AND PREVIOUS YEARS.

YEAR.	Population estimated to Middle of each Year.	BIRTHS.		TOTAL DEATHS REGISTERED IN THE DISTRICT.					TOTAL DEATHS IN PUBLIC INSTITUTIONS IN THE DISTRICT.	Deaths of Non-Residents registered in Public Institutions in the District.	Deaths of Residents registered in Public Institutions beyond the District.	NETT DEATHS AT ALL AGES BELONGING TO THE DISTRICT.	
		Number.	Rate.*	Under 1 Year of Age.		At all Ages.						Number	Rate.*
				Number.	Rate per 1,000 Births registered.	Number.	Rate.*						
1	2	3	4	5	6	7	8	9	10	11	12	13	
1896	20826	425	20·4	61	143	326	15·6	..	37	38	327	15·7	
1897	21285	440	20·6	62	139	348	16·3	..	20	37	365	17·1	
1898	21744	517	23·7	82	158	329	15·1	..	22	40	347	15·9	
1899	22203	484	21·7	96	198	392	17·6	..	19	39	412	18·3	
1900	22662	483	21·3	82	169	358	15·7	..	27	45	374	16·5	
1901	23121	440	19·0	57	129	335	14·4	64	41	37	331	14·3	
1902	23580	540	22·9	86	159	373	15·8	38	42	43	384	16·2	
1903	24039	487	20·2	53	108	325	13·5	57	41	37	321	13·3	
1904	24263	463	19·0	71	153	332	13·6	71	63	42	311	12·8	
1905	24960	401	16·0	55	137	325	13·0	50	45	40	320	12·8	
Averages for years 1896-1905	22868	468	20·4	70	149	344	15·0	..	35	39	349	15·2	
1906	26207	420	16·0	46	109	313	11·9	57	41	49	321	12·2	

* Rates in Columns 4, 8, and 13 calculated per 1,000 of estimated population.

Total population at all ages, 23,121. Number of inhabited houses, 4,359. Average number of persons per house, 5·3
Area of District in acres (exclusive of area covered by water), 1,489.
Institutions within the District receiving sick and infirm persons from outside the District:—1. East Cliff House (Metropolitan Asylums Board); 2. Convalescent Home for Children, Grosvenor Place; 3. Royal Sea Bathing Hospital; 4. Rob Roy Cripples' Home; 5. Victoria Home for Invalid Children, Sea View Terrace; 6. Chateau Belle Vue Infirmary; 7. Churchfield House Convalescent Home; 8. West Ham Union Convalescent Home. The Cottage Hospital receives a few patients from outside the District.
Institutions outside the District receiving sick and infirm persons from the District:—1. Lunatic Asylum at Chatham; 2. Workhouse at Minster; 3. Fever Hospital at Haine. There is no Union Workhouse within the District.

TABLE III.

CASES OF INFECTIOUS DISEASE NOTIFIED DURING THE YEAR 1906 IN THE MARGATE URBAN SANITARY DISTRICT.

CASES NOTIFIED IN THE MARGATE DISTRICT.								No. OF CASES REMOVED TO HOSPITAL FROM MARGATE DISTRICT.
NOTIFIABLE DISEASE.	At all Ages.	At Ages—Years.						
		Under 1	1 to 5.	5 to 15.	15 to 25.	25 to 65.	65 and upwards.	
Small-pox	...	...	...	...	...	...	...	...
Cholera	...	...	...	...	..	...	..	...
Diphtheria	36	1	19	14	1	1	...	32
Membranous Croup	...	...	...	...	...	...	...	...
Erysipelas	9	...	...	1	...	7	1	...
Scarlet Fever	66	...	11	48	5	2	...	51
Typhus Fever	...	...	...	...	...	...	...	...
Enteric Fever	31	...	2	15	...	9	...	23
Relapsing Fever	...	..	...	...	...	...	...	...
Continued Fever	...	...	...	...	...	...	...	...
Puerperal Fever	1	...	...	..	...	...	...	...
Plague	...	...	...	...	...	...	...	...
Totals	143	1	32	78	12	19	1	106

Isolation Hospital: Isle of Thanet Joint Board Hospital, at Haine.

TABLE IV.

CAUSES OF, AND AGES AT DEATH
DURING YEAR 1906, IN THE
DISTRICT OF MARGATE.

CAUSES OF DEATH.	DEATHS AT THE SUBJOINED AGES OF "RESIDENTS" WHETHER OCCUR- RING IN OR BEYOND THE DISTRICT.							Total Deaths whether of Residents or Non-"Resi- dents" in Public Institutions in the District.
	All ages.	Under 1 year.	1 and under 5.	5 and under 15.	15 and under 25.	25 and under 65.	65 and upwards.	
Small-pox ... ..	...	..	...	...	...	...	...	...
Measles	3	...	3	...	...	...	...	...
Scarlet fever	1	...	...	...	1	...	...	...
Whooping-cough	6	2	4	...	...	...	...	...
Diphtheria and membranous croup	6	1	4	1	...	...	...	...
Croup ... ..	...	...	...	...	...	...	...	...
Fever:—								
Typhus ... ..	...	...	...	..	...	...	...	...
Enteric	6	...	...	3	...	3	...	...
Other continued ... ..	...	...	...	...	...	...	...	...
Epidemic Influenza	3	...	...	...	...	3	...	...
Cholera ... ..	...	...	...	...	...	...	...	...
Plague ... ..	...	...	...	...	...	...	...	...
Diarrhœa	20	18	1	1	...	...	...	...
Enteritis	3	2	...	...	..	1	...	...
Puerperal Fever	1	...	...	...	1	...	...	..
Erysipelas ... ..	...	...	...	...	...	...	...	...
Other septic diseases	4	...	2	1	...	1	...	2
Phthisis (Pulmonary Tuber- culosis)	20	...	...	..	2	17	1	12
Other tubercular diseases	15	2	3	2	4	4	...	12
Cancer, malignant disease	32	...	...	1	...	18	13	7
Bronchitis	12	1	2	...	1	2	6	1
Pneumonia	13	1	2	1	1	7	1	1
Pleurisy ... ..	...	...	...	...	...	...	...	...
Other diseases of Respiratory organs ... ..	...	...	...	...	...	...	...	...
Alcoholism—Cirrhosis of liver	11	...	...	...	...	9	2	...
Venereal diseases	1	...	...	...	...	1	...	...
Premature birth	9	9	...	..	...	...	...	...
Diseases and accidents of par- turation ... ..	...	...	...	...	...	...	...	...
Heart diseases	29	...	2	1	...	12	14	4
Accidents	3	...	1	...	...	2	...	3
Suicides	1	...	...	...	...	1	...	...
All other causes	122	11	5	3	2	34	67	15
All Causes	321	47	29	14	12	115	104	57

TABLE V.

INFANTILE MORTALITY

DURING THE YEAR 1906.

DEATHS FROM STATED CAUSES IN WEEKS AND MONTHS
UNDER ONE YEAR OF AGE.

CAUSE OF DEATH.		Under 1 Week.	1-2 Weeks.	2-3 Weeks.	3-4 Weeks.	Total under 1 Month.	1-2 Months.	2-3 Months.	3-4 Months.	4-5 Months.	5-6 Months.	6-7 Months.	7-8 Months.	8-9 Months.	9-10 Months.	10-11 Months.	11-12 Months.	Total Deaths under 1 year.	
All Causes.	{ Certified Uncertified	7 1	1 ..	.. ..	3 ..	11 1	4 ..	5 ..	5 ..	3 ..	3 ..	2 ..	2 1	1 ..	3 1	2 ..	1 1	42 4
Common Infectious Diseases.	Small-pox	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
	Chicken-pox	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
	Measles ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
	Scarlet Fever	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
	Diphtheria : Croup	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
	Whooping Cough	..	..	..	..	..	..	1	..	..	..	1	..	..	..	..	..	2
Diarrhœal Diseases.	Diarrhœa, all forms	..	..	..	..	..	..	3	5	3	2	..	3	1	1	1	1	20
	Enteritis (not Tuberculous) ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
	Gastritis, Gastro-intestinal Catarrh..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Wasting Diseases.	Premature Birth	5	..	..	2	7	1	..	..	..	..	..	..	..	..	..	..	8
	Congenital Defects	1	..	..	..	1	..	..	..	..	..	..	..	..	..	..	..	1
	Injury at Birth..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
	Want of Breast-milk	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
	Atrophy, Debility, Marasmus..	1	..	..	..	1	2	1	..	..	..	..	..	..	..	..	..	4
Tuberculous Diseases.	Tuberculous Meningitis	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
	Tuberculous Peritonitis:	..	..	..	..	..	1	..	..	..	..	..	..	..	..	..	..	1
	Tabes Mesenterica..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
	Other Tuberculous Diseases..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..	..	1
Other causes	Erysipelas	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
	Syphilis ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
	Rickets ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	1	2
	Meningitis (not Tuberculous)	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
	Convulsions	1	..	..	..	1	..	..	..	..	..	..	..	..	..	..	..	1
	Bronchitis	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..	..	1
	Laryngitis	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
	Pneumonia	..	..	..	..	..	..	..	..	1	..	..	..	..	..	..	..	1
	Suffocation, overlaying	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
	Other causes .. ..	..	1	..	1	2	..	..	..	..	..	1	..	..	1	..	..	4
			8	1	..	3	12	4	5	5	3	3	2	3	1	4	2	2	46
	BIRTHS IN THE YEAR { Legitimate : 404. Illegitimate : 16.		DEATHS IN THE YEAR { Legitimate 40. Illegitimate : 6.																
	POPULATION (Estimated to middle of 1906): 26,207.																		
DEATHS FROM ALL CAUSES AT ALL AGES : 313.																			



Borough of Margate.

ANNUAL REPORT

OF THE

METEOROLOGY

For the Year 1906,

FROM OBSERVATIONS TAKEN AT

“Westlands,” Grosvenor Place.

LONGITUDE $1^{\circ}24''$ E. LATITUDE $51^{\circ}24''$ N.

HEIGHT ABOVE SEA LEVEL 55 FEET.

Climatological Station of the Royal Meteorological Society.



To the Chairman and Members of the Sanitary Committee.

GENTLEMEN,

I have pleasure in again presenting herewith the Annual Report relating to the weather conditions of the Borough during the past year. In many respects these conditions were unique and of a most interesting character, the splendid summer especially calling for particular notice. The average daily temperature for the year (51°) is one of the highest on the register; the amount of the rainfall ($20\frac{1}{2}$ inches) among the smallest; and the number of the hours of sunshine (1,874) the most we have yet had. The Report is the fifteenth presented to the Council, but the majority of the observations are now complete for twenty-five years, thus forming a substantial record.

Following the order of previous years we first
The draw attention to the Barometer, the instrument
Barometer. so universally consulted, and whose movements
are so closely studied. The average, the result
of the 9 a.m. daily readings, was 30.016 inches, slightly below last
year and considerably above the average; only three times has it
stood higher. The range was not quite so much, from 30.68 to
28.81 or less than two inches, which we often get. The Barometer
had generally the lowest readings in February, but in only four
months was it one day with another less than 30 inches. The
Richard Barograph clearly throughout the year shows the rising and
falling of this instrument. There are several Barographs in the
town and they are objects of much interest. There were altogether
18 gales, four of them from the eastward, the rest from S.W. to
N.W. They occurred in nearly each month.

Throughout the year the readings have been taken every morning from 12 Thermometers, and from several of them in the evening also.

The most important are the maximum and minimum instruments placed in the Stevenson's Screen, and from which we deduce the average daily temperature for the year, 51° . This is $\frac{1}{2}^{\circ}$ above the last year, $1^{\circ}\cdot4$ above the average for the 25 years, and has only been exceeded twice. The average at 9 a.m. was $51^{\circ}\cdot1$, a remarkable though usual agreement with that for the year.

JANUARY was a warm month, about 4° in excess of the average, and with only five frosts.

FEBRUARY was $\frac{1}{2}^{\circ}$ up, but there were frosts on half the nights, and with

MARCH (which was just the average) was colder than January.

APRIL was about 1° down and there were as many as 11 night frosts.

MAY again was 2° in excess of the average and there were no more frosts till the middle of November.

JUNE, with a temperature of 3° above the previous month was slightly below the average.

JULY, AUGUST and SEPTEMBER, the three summer months, were exceptionally fine, showing an excess in each month, and were the highest third quarter average for many years in Margate; this, with the small amount of rain, made the summer a splendid one. Perhaps, however, the great heat from the 31st August to September 3rd, when the shade maximum twice exceeded 90° , was a more remarkable record still. The effects of this splendid weather on the season here were utilised in an excellent paper, read before the Royal Meteorological Society by Mr. W. Marriott, entitled: "The Abnormal Weather of the past Summer." Out of 1,200 outdoor entertainments only six were missed owing to bad weather.

OCTOBER was the month which departed most from the average, the daily temperature being not less than 5° in excess.

From the carefully prepared Government Report for this month we learn that the daily temperature (56°) was exceeded only by the stations in the Channel Islands. The rainfall was the smallest in the land, and of the 100 stations notifying their sunshine, 90 had a less amount. These results were well reported.

Yet again, NOVEMBER was warmer than usual by $2\frac{1}{2}^{\circ}$ and there were only two slight night frosts.

DECEMBER was the only month which really went wrong, being $2\frac{1}{2}^{\circ}$ below the average and showing 20 frosty nights. This was the only month with a less average temperature than 40° .

The hottest and coldest days, with their readings, were:—

	At 9 a.m.	Maximum.	Minimum.	Average.
September 2	$80^{\circ}\cdot4$	90°	$67^{\circ}\cdot3$	$78^{\circ}\cdot6$
December 27	$34^{\circ}\cdot6$	$35^{\circ}\cdot3$	$19^{\circ}\cdot8$	$27^{\circ}\cdot5$

The maximum shade reading was $90^{\circ}\cdot8$ on August 31st.

Good Friday, Easter Monday, Whit-Monday, August Bank Holiday and Christmas Day were all fine.

The average daily range was $11^{\circ}\cdot2$, a little higher than the previous year.

The average daily change of temperature each morning was only $3^{\circ}\cdot4$, and on only ten occasions did the Bulb show a difference any morning of more than 10° to that of the previous morning. These facts are of great importance. The Black Bulb, an instrument fully exposed to the sun, reached 132° on September 3rd. It first reached 100° on April 13th, a very warm day, and the last occasion was October 11th. The following table shows the number of days on which the maximum shade reached certain degrees.

Over	30°	40°	50°	60°	70°	80°	90°
1906	21	95	101	90	49	7	2
1905	9	116	117	80	40	3	...
Average	20	87	122	92	39	5	...

I drew attention to the importance of these instruments last year, and would repeat it again.

Earth

Temperatures. There are four thermometers going respectively to the depths of 6, 12, 24 and 48 inches. Their readings are noted each morning at 9 a.m., and the results are set forth in the table herewith. The highest averages were recorded in August from those nearest the surface, and the lowest in February, also from the same two thermometers. Special interest attaches to the summer figures of the four foot, down to which sudden changes take nearly four days to travel. That instrument marked 56° from Midsummer Day to the end of October, a record result.

The fall was a little less than the previous year, and amounted to nearly $20\frac{1}{2}$ inches, and was rather more than 2 inches below the average total for the Borough. Rain fell on 166 days of which number more than 20 only yielded '01 of an inch. There were thus 200 days (save one) without rain. Seven months had a less, and five a greater fall than usual. We were without rain for three weeks in the spring of the year, while but $1\frac{1}{2}$ inches fell from the 30th of June to the 12th of September (ten weeks). No very heavy amount in one day fell during the year. I append for the second time the figures taken at the Waterworks at Wingham by Mr. W. R. Hosking. This is an interesting and useful return. The total is $4\frac{1}{4}$ inches in excess of Margate and at least six of the months were wetter.

			Fall.	Maximum.	Days of Rain.
January	...	...	3.25	.62	18
February	...	...	2.17	.32	18
March	...	...	1.53	.24	16
April	...	...	.65	.25	8
May	...	...	1.84	.42	10
June	...	...	2.39	.82	7
July	...	...	.80	.36	6
August	...	...	.36	.11	7
September	...	...	1.49	.37	10
October	...	...	3.28	1.07	15
November	...	...	5.16	.70	20
December	...	..	1.87	.30	17
			24.79	1.07	152

Sunshine.

Perhaps the most interesting of all the records has been again regularly taken. The total 1874 hours is the highest since it has been measured here. The London total was 1522 or about 30 hours a month less. November was the only month with less than the average. The sun marked the card on 308 days and on as many as 63 for ten hours or more ; the maximum was 14.6 on June 27th.

The Wind.

The direction from which the Wind blows is daily noted, and is of immense importance. As in each previous year, and as is the case in so many other places, westerly winds predominated. Three-fifths of the entries were from S.W. to N.W. In April, June and September, N.E. winds were in the ascendant. On 11 occasions there were calms. The average force at which the wind blew was three, the same as last year (0 calm, 7 gale, 12 hurricane). It is particular to note that in January, February, March, October, November and December, the westerly directions were 121 out of 181 observations.

The figures for the year are :—

		N.	N.E.	E.	S.E.	S.	S.W.	W.	N.W.	Calms
1906	...	14	58	24	26	22	118	43	49	11
1905	...	15	54	16	28	20	126	48	46	12
20 years' average		33	33	44	22	40	80	58	22	33

Phenomena.

Entries are made, as arising, of any particular or interesting meteorological phenomena occurring. Most calling for attention were the numerous lovely sunsets in nearly each month. There were nine thunderstorms ; fogs on only about a dozen days ; snow on 17 ; hail on five days ; halos and lunar coronæ nine times. During the year there were a very large number of sun spots. During the hot days when the shade temperature twice reached 90° the relative humidity at noon stood as low as 30 per cent. Lightning alone was often noted, and occasionally a rainbow.

Distribution.

The distribution of these figures has been most carefully attended to, though the list is but a repetition of last year. The part taken by the Town Council in this matter is far from small, but not yet equal to that of many other seaside places. Of what is done I have had abundant evidence that it has come to the notice of very many.

(1) DAILY.—Telegrams sent to London at 8.30 a.m. and 6 p.m.; from these the London papers obtain their reports. The principal items are posted on the Jetty board and at several London Railway Stations. An evening post-card is sent to the Government Meteorological Office. A notice in the Daily Weather Report; in this report on no less than 26 times there were special remarks relating to our returns. These are much noticed.

(2) WEEKLY.—Summaries and averages are published in the local Press, "The Financial News" (at the charge of the Chamber of Commerce), and in the Government Weekly Weather Report.

(3) MONTHLY.—To the Royal Meteorological Society and to the "Daily Telegraph." Also for publication in the records of the East Kent Natural History Society.

(4) YEARLY.—Rainfall figures sent to "British Rainfall."

A table with the principal instruments was assigned a place at the *Conversazione* of the Margate Photographic and Scientific Society. I had also the pleasure of reading a paper on the methods employed in taking the observations at an evening gathering of the Society.

With the close of the past year records of 25
Twenty-five years' observations have been completed for many
Years' Averages. of the instruments. As this is a lengthy period
 I append a carefully worked table of their result.
 The number of stations with a longer record are few.

*TWENTY-FIVE YEARS' AVERAGE,
1882 to 1906 Inclusive.*

	Average.	Highest in Period.	Lowest in Period.	Number of Years.
Barometer	29.988	30.912	28.381	24
Dry Bulb 9 a.m. ..	50 ⁰ .1	82 ⁰	—	25
Wet Bulb	47 ⁰ .2	—	—	24
Maximum Shade ..	55 ⁰ .4	93 ⁰ .4	—	25
Minimum	44 ⁰ .2	—	13 ⁰ 8	25
Range	11 ⁰ .2	12 ⁰ .4	9 ⁰ .9	25
Daily Average ..	49 ⁰ .8	51 ⁰ .6	48 ⁰	25
Black Bulb	91 ⁰	142 ⁰	—	23
Grass Minimum ..	41 ⁰	—	7 ⁰ 8	21
Cloud (0 to 10) ..	6.8	7 3	6.4	25
Sunshine (Hours) ..	1615	1874	1466	15
Sunless Days	66	80	56	15
Rainfall (Inches) ..	22.40	28.88	15.07	26
Rainy Days	162	187	129	26
Night Frosts	67	93	31	25

The Station was inspected by Mr. William Marriott, Secretary of the Royal Meteorological Society, in September last.

I have replied to a large number of enquiries.

Trusting and believing these figures are of use to the Borough,

I have the honour to be, Gentlemen,

Your obedient servant,

JOHN STOKES, F.R. Met. Soc.,

Meteorologist to the Borough of Margate.

March, 1907.

EXTREMES AT MARGATE.

1906.	BAROMETER.		THERMOMETERS.			
	Highest.	Lowest.	Max.	Min.	Grass.	Black Bulb.
JANUARY ...	30·650	29·900	52·8	28·2	24·	75
FEBRUARY...	·294	28·850	49·6	29·6	26·	90
MARCH... ..	·450	29·314	63·	28·5	28·	96
APRIL	·624	29·400	70·2	32·5	29·	112
MAY	·251	29·544	70·8	38·2	32·6	113
JUNE	·448	29·700	77·7	42·2	40·	115
JULY	·332	29·506	83·9	47·8	45·	118
AUGUST ...	·500	29·750	90·8	48·9	46·7	130
SEPTEMBER	·680	29·645	90·	42·7	39·	132
OCTOBER ...	·368	29·450	70·8	37·	34·6	105
NOVEMBER	·604	29·208	60·2	33·	30·	86
DECEMBER	30·600	28·808	53·8	19·7	17·	54
	30·680	28·808	90·8	19·7	17·	132
	September 27	December 26	August 31	December 27	December 27	September 3

METEOROLOGICAL OBSERVATIONS, MARGATE, 1906.

AVERAGES.

TOTALS.

1906	BARO-METER.	BULBS.		Relative Humidity.	Difference at 9 a.m.	THERMOMETERS.					EARTH.				RAINFALL.					SUNSHINE.		FROSTS.						
		Dry.	Wet.			Max.	Min.	R'nge	Ave	Diff. from 20 yrs.	On Grass	Foot 1/2	Foot 1	Fe 2	Fe 4	Cloud (0 to 10)	Fall.	Ins.	Diff. from 20 yrs.	Days		Max. Fall.	Day.	H'rs.	Days		Scr'n	Grass
																				With	Not				Not.	With		
JANUARY ..	29 967	42.2	39.9	82	3.9	46.7	38.5	8.2	42.6	+3.8	35.	41.3	41.8	43.4	45.6	6.8	2.10	+0.40	21	10	0.26	7	77	8	23	4	5	
FEBRUARY	29 771	39.1	37.4	86	3.	44.3	35.7	8.6	40.	+0.5	33.1	39.2	39.9	42.1	44.1	7.3	1.57	+0.07	21	7	0.30	16	71	9	19	5	15	
MARCH	29 990	42.1	39.8	82	3.8	46.7	37.	9.7	41.8	-0.1	35.2	41.4	41.9	42.9	44.3	6.6	1.41	-0.06	18	13	0.16	10	128	7	24	4	9	
APRIL	30 133	46.6	42.8	73	3.7	52.1	39.3	12.8	45.7	-0.9	35.2	45.3	45.5	45.5	46.	4.6	0.67	-0.65	9	21	0.17	27	235	3	27	3	11	
MAY	29 885	53.7	50.3	78	3.7	59.9	47.9	12.	53.9	+2.1	44.	52.6	52.5	50.7	50.1	7.8	2.13	+0.58	12	19	0.51	20	209	3	28	..	..
JUNE	30 127	57.5	53.4	75	2.7	63	51.1	11.9	57.	-0.5	48.3	58.6	57.2	56.2	54.4	7.1	1.87	+0.33	9	21	0.69	28	224	2	28	..	..
JULY	30 027	63.6	59.1	74	3.1	70.8	56	14.8	63.4	+1.7	53.1	63.7	63.6	60.8	58.6	5.3	0.71	-1.40	9	22	0.24	11	260	..	31	..	..
AUGUST	30 023	65.6	62.7	83	3.1	73.1	57.4	15.7	65.2	+3.3	54.7	64.5	64.5	62.6	60.9	4.9	0.52	-1.42	5	26	0.18	17	243	..	31	..	..
SEPTEMBER	30 201	61.2	56.6	73	2.5	67.5	55.3	12.2	61.4	+2.7	51.4	60.4	60.7	60.8	60.7	5.8	1.87	-0.12	9	21	0.60	17	210	..	30	..	..
OCTOBER ..	29 892	55.9	53.4	84	3.8	61.3	50.4	10.9	55.8	+5.0	47.7	54.8	55.4	56.5	57.5	7.4	1.81	-1.02	16	15	0.40	2	125	1	30	..	..
NOVEMBER	29 899	48.2	46.3	86	4.3	52.3	43.7	8.6	48.	+2.6	40.1	48.5	49.2	51.4	53.	8.5	3.96	+1.54	19	11	0.50	8 & 19	42	13	17	..	2	
DECEMBER	30 272	37.9	36.2	85	3.8	42.1	33.0	9.1	37.5	-2.7	31.2	40.3	41.2	45.2	48.2	8.1	1.80	-0.43	18	13	0.28	6-25	50	11	20	12	20	
1906	30 016	51.1	48.2	80	3.4	56.6	45.4	11.2	51.	+1.4	42.4	50.9	51.1	51.5	52.	6.7	20.42	-2.18	166	199	0.69	J'ne 28	1874	57	308	28	62	
1905	30 020	50.3	47.4	81	3.1	55.5	45.6	9.9	50.5	+0.9	42.7	50.4	50.9	51.3	51.7	6.9	21.18	-1.42	172	193	1.80	J'ne 5	1577	74	291	17	48	